

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



PCT

(43) International Publication Date
9 March 2006 (09.03.2006)

(10) International Publication Number
WO 2006/025869 A3

(51) International Patent Classification:

C10M 125/20 (2006.01) **F16C 33/12** (2006.01)
C10M 173/00 (2006.01) **C23F 11/00** (2006.01)

AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(21) International Application Number:

PCT/US2005/010217

(22) International Filing Date: 25 March 2005 (25.03.2005)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/556,430 26 March 2004 (26.03.2004) US

(71) Applicant (for all designated States except US): **LUNA INNOVATIONS INCORPORATED** [US/US]; 2851 Commerce Street, Blacksburg, Virginia 24060 (US).

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

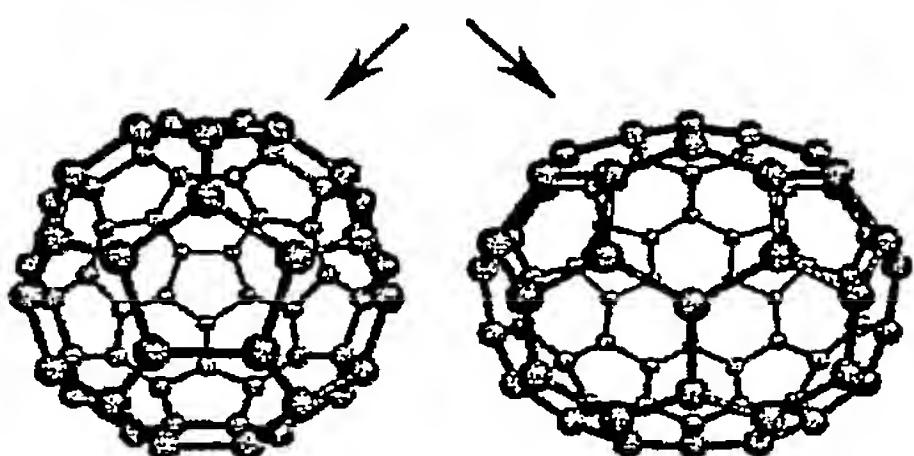
(88) Date of publication of the international search report:

29 June 2006

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: A_{3-n}X_nN@C₈₀ ENDOHEDRAL METALLOFULLERENES AS LUBRICANT OF ADDITIVE, CORROSION-RESISTANT COATING, AND THERMALLY-CONDUCTIVE MATERIALS.

Empty Cage Fullerenes



(57) Abstract: A_{3-n}X_nN@C₈₀ endohedral metallofullerenes used as or in lubricant, lubricant additive, corrosion-resistant, and thermally conductive materials are disclosed. Methods of making and using are provided.